

CAP

Clean Air Program

Draft Regulation Overview

Environment
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Draft Regulation
Overview

August 1990



PREFACE

In November 1987, the Ministry of the Environment released a discussion paper on a new Clean Air Program for Ontario entitled "Stopping Air Pollution at its Source." During a 90-day comment period a series of public and special interest group meetings were held throughout the Province and wide-ranging written submissions were made to the Minister.

The Draft Regulation of the Clean Air Program contains an overview document accompanied by several appendices which describe procedures and protocols in detail. The appendices are referenced and described below and in each volume. Copies of the documents can be obtained separately or as a package from:

Environment Ontario
Public Information Centre
135 St. Clair Avenue West
Toronto, Ontario
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The Ministry believes that asking the public for its opinions - and listening to them - is essential to the development of programs which are effective in protecting our environment. Therefore, province-wide public consultation activities are being planned over a 180-day period. During this time, the Ministry will hold meetings to explain its Clean Air Program and to seek out the views of interested parties.

All members of the public are encouraged to participate in the public consultation process and to respond to the Ministry's request for comments. The comments received will then be taken into account as the program is finalized.

Summary of CAP Documentation

The Clean Air Program Draft Regulation outlines the Ontario Ministry of the Environment's proposals for regulating stationary air emission sources in the Province. The contents of the Draft Regulation are presented in an overview document and three volumes of appendices. An additional volume summarizes the comments received by the Ministry on its 1987 Discussion Paper - "Stopping Air Pollution At Its Source." In order to assist in the reading of the documents the following summary of the contents of the various volumes is presented:

Draft Regulation Overview:

In this volume the key elements of the Clean Air Program are identified, and the way in which the Ministry is proposing that they should be integrated into a new regulatory package is specified.

Responses to Public Comments:

Comments received at public meetings, meetings with special interest groups, an open workshop, and in submissions as a result of the Discussion Paper are summarized, and references are provided as to how and where the comments have been incorporated into the Draft Regulation or reasons are supplied as to why this has not been possible.

Appendices 1 and 2

Appendix 1 - DEFINITIONS

Technical terms used in the overview document and in the other appendices are defined to facilitate the interpretation of these documents.

Appendix 2 - SOURCE REGISTRATION

Appendix 2-1 - SOURCE REGISTRATION RATIONALE

The purpose and intent of the proposed source registration scheme are identified.

Appendix 2-2 - **SOURCE REGISTRATION LEGISLATION**

The anticipated scope of the proposed source registration scheme is outlined. The applicability of source registration, and the requirements on owners and operators, including thresholds, the proposed treatment of mixtures and trade names, and proposed exemptions are identified.

Appendix 2-3 - **LISTS OF CHEMICAL SUBSTANCES FOR SOURCE REGISTRATION**

The list of chemicals which owners or operators will be required to consider when filing a source registration statement is provided. This list is presented (1) in alphabetical order, (2) by CAS number order with synonyms, and (3) by synonyms in alphabetical order.

Appendix 2-4 - **CANADIAN STANDARD INDUSTRIAL CLASSIFICATION CODES**

A listing of the Canadian Standard Industrial Classification Codes accompanies the Lists of Chemical Substances for Source Registration which it is proposed should be dealt with in the initial phase, the second phase and the third phase.

Appendix 2-5 - **SAMPLE REGISTRATION FORM**

A sample registration form is provided.

Appendix 2-6 - **SAMPLE INSTRUCTIONS**

A sample of the instructions (from U.S. E.P.A. SARA Title III Section 313) is supplied.

Appendix 2-7 - **SAMPLE EMISSION CROSS-REFERENCE**

A sample of the Emission Cross-Reference and Section 313 Final Rule (which includes a sample method for estimating releases) is provided.

Appendices 3-7

Appendix 3 - **IMPLEMENTATION OF THE CLEAN AIR PROGRAM**

The manner in which it is proposed to implement the Clean Air Program is provided.

Appendix 4 - **APPROVALS**

The details of the proposed approvals mechanisms under the Clean Air Program are provided.

Appendix 4-1 - **APPROVALS PROCESS**

The proposed requirements of the Ministry's air approvals process, under which certificates of approval to construct and operate will be issued, are specified together with basic information requirements for the process, and the manner in which it is proposed the process should operate.

Appendix 4-2 - **GENERIC CERTIFICATES OF APPROVAL**

The proposals to handle the granting of certificates of approval to sources which have minor impact on the environment, and have common characteristics which permit generic or class control limitations to be employed, are itemized. An example based on U.S. state regulations for dry-cleaning establishments is appended.

Appendix 4-3 - **EXPERIMENTAL FACILITIES**

Proposed measures for handling pilot plants, laboratories and prototypes are identified.

Appendix 5 - **SMALL AND SPECIAL SOURCES**

The Ministry's proposals for handling the approval of small and special sources are described.

Appendix 5-1 - **SMALL SOURCE DESIGNATION LIMITS**

The Ministry's suggested methodology for defining small sources, is provided, accompanied by a list of suggested small source designation limits for chemicals included in the source registration process.

Appendix 5-2 - **CODES OF PRACTICE - CONCEPTUAL OUTLINE**

Codes of Practice are suggested as a mechanism for handling the regulation of certain types of sources. These include sources not amenable to conventional control technologies, defined as necessary or unavoidable and/or conducted infrequently or for short time periods at a particular location. The general conditions which will be included in codes of practice and a sample for open burning are provided.

Appendix 6 - **CONTAMINANT CLASSIFICATION PROCESS AND AIR QUALITY STANDARDS**

The methodologies which are proposed for the contaminant classification process and the setting of air quality standards are discussed.

Appendix 6-1 - **OVERVIEW: CLASSIFICATION, REGULATORY STRATEGIES AND AIR QUALITY STANDARDS**

The role of classification and air quality standards in the Clean Air Program; definition of a target list of chemicals; the classification methods which will be used; features of the proposed "interim classification" system, including a "public participation in classification process"; and the general characteristics of the proposed system for defining regulatory strategies, criteria and standards are summarized.

Appendix 6-2 - **THE CLEAN AIR PROGRAM (CAP) GENERIC CLASSIFICATION PROCESS**

The types of information which will be considered in the process of classifying contaminants are identified.

Appendix 6-3 - **MINISTRY OF THE ENVIRONMENT CHEMICAL LEVEL-OF-CONCERN CLASSIFICATION PROCESS**

Details of the proposed Ministry of the Environment process for classifying contaminants are supplied. Three methods are identified: development of (1) "detailed" or (2) "preliminary" dossiers together with the use of the MOE detailed scoring system; and (3) the use of various jurisdictional and property information.

Appendix 6-4 - **PROPOSED INTERIM LIST OF CONTAMINANTS CLASSIFIED ON THE BASIS OF LEVEL-OF-CONCERN**

Included in this Appendix are a proposed classification of contaminants listed as emissions in certificates of approval over recent years, and priority chemicals believed to be in use in Ontario which have been identified under the Canadian Environmental Protection Act or by other recognized jurisdictions as being of concern.

Appendix 6-5 - **PART 1: PUBLIC PARTICIPATION IN THE CLASSIFICATION PROCESS**

The process whereby the public, industry, and interested parties will be able to contribute to the classification of contaminants, is detailed.

Appendix 6-5 - **PART 2: CHEMICAL DOSSIERS**

Details of the requirements concerning the submission of chemical dossiers are supplied, together with a manual describing the Chemical Evaluation Search and Retrieval System (CESARS) written by the Michigan Department of Natural Resources as part of a joint effort with the Province of Ontario.

Appendix 6-6 - **REGULATORY STRATEGIES: THE DECISION PROCESS**

A three-tier approach which the Ministry of the Environment is considering in order to produce air quality standards and chemical specific regulatory strategies is discussed.

Appendix 6-7 - **INTERIM AIR QUALITY STANDARDS**

The values which the Ministry is proposing to use in connection with the new modelling package in evaluating applications for certificates of approval are supplied. The lists are arranged according to the averaging period which will be used: 24 hour; 1 hour; 10 minute; irregular averaging times; and 1 year.

Appendix 7 - **EMISSION LIMITS AND APPROVALS**

The Ministry's proposed mechanisms for setting and listing emission limits for use in the certificate of approval process are provided.

Appendix 7-1 - **EMISSION LIMITS**

The emission limits for various processes which the Ministry is proposing should be appended to a final draft regulation and used in the certificate of approval process are discussed.

Appendix 7-2 - **GUIDELINE FOR DETERMINATION OF EMISSION LIMITS**

The policies and requirements of the Ontario Ministry of the Environment used in setting emission limits under the Clean Air Program are documented.

Appendix 7-3 - **THE EMISSION LIMIT-SETTING PROCESS**

The process for setting emission limits is outlined.

Appendix 7-4 - **REQUIREMENTS FOR UPSETS, STARTUPS,
SHUTDOWNS AND BYPASSES**

The conditions under which by-passing of air pollution control systems are not permitted are identified.

Appendix 7-5 - **VISIBLE EMISSIONS**

The Ministry's proposals concerning visible emissions are provided together with U.S. E.P.A. Regulations on Standards of Performance for New Stationary Sources which will be used as a basis for proposed regulatory changes.

Appendix 7-6 - **PUBLIC CONSULTATION PROVISIONS**

Proposed avenues for public discussion of emission limit setting and the issuance of certificates of approval are identified.

Appendices 8-11

Appendix 8 - **AIR QUALITY MODELLING**

An overview of the dispersion modelling requirements associated with the certificate of approval process is provided, including the manner in which the modelling should be applied.

Appendix 8-1 - **A GENERAL USER'S GUIDE FOR SOURCE
ASSESSMENT**

Details of the requirements concerning modelling are supplied.

Appendix 8-2 - **DETAILED DESCRIPTION OF THE FULL MULTI-
SOURCE AIR QUALITY MODELLING TECHNIQUE
FOR CALCULATION OF LOCAL AIR
CONCENTRATIONS**

The modelling package which the Ministry is proposing is described in detail complete with equations.

Appendix 8-3 - **MODELLING SCHEDULE - METHODOLOGY FOR THE DETERMINATION OF METEOROLOGICAL PARAMETERS REQUIRED FOR THE FULL AIR QUALITY MODEL CALCULATIONS.**

The process for determining the meteorological inputs to the models is described.

Appendix 8-4 - **A USER'S GUIDE TO THE AIR QUALITY MODELLING SOFTWARE**

A guide is provided to facilitate the running of the computer programs associated with the dispersion modelling package.

Appendix 8-5 - **SUPPLEMENTARY CONTROL PROGRAMS**

The conditions under which the Ministry is proposing that supplementary control programs should be utilized under CAP are identified.

Appendix 9 - **SOURCE TESTING**

The general provisions which it is proposed should govern source testing programs under the revised regulatory structure are supplied.

Appendix 9-1 - **SOURCE TESTING CODE**

Ontario's source testing code, which is under revision, is referenced. It is proposed that the revised version of this code will be the standard reference for use with the revised regulation.

Appendix 9-2 - **SOURCE TESTING METHODOLOGIES IN OTHER JURISDICTIONS**

A list of reference test methods from the U.S., which it is proposed should be used in Ontario, is supplied.

Appendix 10 - **AMBIENT AIR MONITORING**

The general requirements concerning ambient air monitoring are identified.

Appendix 10-1 - **AMBIENT AIR MONITORING APPROVED SAMPLING AND ANALYTICAL METHODS**

The sampling and analytical methods approved by the Ministry for pre-operational and post startup ambient air monitoring are summarized.

Appendix 10-2 - **ASSESSING THE IMPACT OF AIRBORNE CONTAMINANTS ON SOIL AND TERRESTRIAL VEGETATION**

The Ministry's methodology for evaluating the effect of airborne contaminants on soils and vegetation are detailed as a standard measuring/assessment technique.

Appendix 11 - **QUALITY ASSURANCE FOR THE CLEAN AIR PROGRAM**

The general quality assurance requirements under the Clean Air Program concerning: continuous ambient air monitoring activities; continuous source emission monitoring activities; discrete ambient air monitoring activities; and discrete source emission monitoring activities are discussed.

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1. INTRODUCTION

The Ministry of the Environment's discussion paper entitled "Stopping Air Pollution at its Source - Clean Air Program" identified problem areas in the existing regulatory framework and proposed reforms. These reforms include:

- requirements for direct emission limits on all air pollution sources of any appreciable size;
- a system for establishing these limits based on the level of hazard for each contaminant;
- improved atmospheric models for predicting the impact on air quality of emissions to the atmosphere for comparison with enforceable ambient air standards;
- an improved process for setting ambient air standards;
- inclusion of operating standards on certificates of approval to construct and operate, with certificates to operate being subject to renewal on a regular basis;
- mechanisms for phasing in the Clean Air Program;
- measures to deal with overloaded airsheds;
- other changes to existing regulations required to bring all aspects of the program into agreement with the Clean Air Program.

These proposals formed the basis for discussions with interested parties in a series of meetings with public groups, industry representatives and other government bodies and through written submissions. A summary of the various comments which the Ministry received, together with the Ministry's responses, has been published as a separate volume. The comments have been incorporated into the writing of the Draft Regulation of the Clean Air Program.

To assess the potential impact of the Clean Air Program, the Ministry commissioned an economic analysis of the proposals.

The Ministry has used the results of the public consultation process and the economic studies to further develop and refine the Clean Air Program.

Accordingly, this overview summarizes a package of changes to existing legislation and regulations related to emissions to the atmosphere. These include the Environmental Protection Act R.S.O. 1980 and several relevant regulations including Regulation 308, Air Pollution - General. The Ministry invites interested parties to comment on these proposed changes during a 180-day discussion period. Following the discussion period the Ministry will revise the proposals to take account of comments received.

2. GENERAL PRINCIPLES

The Ministry of the Environment's goal is the virtual elimination of air toxics.

The Clean Air Program Draft Regulation proposes that:

- all significant air pollution sources should be required to install appropriate control equipment and meet specific emission limits;
- and
- the level of pollution controls be matched to the hazardousness of the contaminant.

The Clean Air Program divides air pollutants into three Levels of Concern. These Levels delineate differing degrees of environmental hazard posed by these substances, with emphasis on human health effects. The degree of control stringency required for each contaminant is tied to the degree of environmental hazard (the Level of Concern) associated with it. The Level of Concern is thus also the level of control. The correspondence between the two is as follows:

- Level of Concern 1: Contaminants which present a high hazard to the environment, for example due to known or probable human carcinogenicity and/or persistence or tendency to bioaccumulate in the environment. Control is aimed at virtually eliminating these pollutants - the strictest controls required anywhere in the world are to be used. Economic factors may be considered in the timing of implementation, but not in establishing the emission limit.
- Level of Concern 2: Contaminants which are of significant concern in the environment, for example due to other effects on genetic material (possible carcinogenicity, teratogenicity), ability to affect distant receptors due to long-range transport and/or transformation in the atmosphere. Control is aimed at minimizing emissions of such compounds to the greatest extent feasible - the best controls demonstrated in use anywhere in the world are to be used, taking into consideration economic factors.
- Level of Concern 3: Contaminants which are of moderate concern in the environment, because of significant nuisance effects. These require control to levels well below the onset of any health effect. Control is aimed at providing reasonable abatement of emissions to avoid the nuisance. Economic factors are considered in establishing the emission limit.

To identify the appropriate emission limits and procedures for these levels, world-wide searches of emission limits used in other jurisdictions for a selected group of contaminants

will be undertaken by the Ministry. Other proposed emission limitations will be based on proponents' searches of the literature according to guidelines developed by the Ministry.

Regulatory strategies, which will include the development of air quality standards (AQS's), will be established as a second line of defence in the proposed system. Proponents will be required to show that their proposals will meet local ambient air quality standards.

All facilities under the proposed new framework will require a certificate to construct and operate. The section of the certificate relating to operating conditions must be renewed every 10 years. This renewal will ensure proper operation and continuous improvements to air pollution control.

The Clean Air Program will be phased in with the contaminants of greatest concern being reduced first. Accordingly, priority in the phasing in will therefore be given to those chemicals which are Level 1, of broad environmental concern and are being emitted in Ontario in significant quantities.

In order to provide more information on existing emissions to the atmosphere, all users or producers of specified chemical compounds above certain size limits will be required to document the quantity and nature of their emissions. This will enable a comprehensive inventory of air emissions to be developed for the first time in Ontario.

The general public and all affected parties are invited to participate in discussions on the proposed regulations.

3. KEY COMPONENTS OF THE PROPOSED CHANGES TO REGULATION 308

3.1 Operating Requirements

3.1.1 *Certificates of Approval*

New or modified sources of emissions to the atmosphere will be required to obtain a site-specific two-part certificate of approval. The certificate will:

- ensure the use of emission controls which meet the Ministry's requirements;
- and
- guarantee adequate maintenance and periodic updating of emission control equipment.

It will consist of two sections issued concurrently. The first part will provide permission to construct and the second will set emission limits and operating conditions for the facility. The permission to construct will require work on the facility to be initiated within 12 months and completed within 24 months of the issuance of the certificate unless cause can be established for extension. The operating section of the certificate will require renewal within 10 years from the date of issuance. The Ministry will require registration of all changes in ownership and will retain the right to revoke a certificate with cause.

To obtain a certificate of approval to construct and operate a proponent will be required to submit information to the Ministry of the Environment in accordance with Section 8 of the Environmental Protection Act and appropriate appendices. The requirement for certificate(s) of approval to construct and operate will be effected through legislative changes to the Environmental Protection Act.

3.1.2 *Enforcement*

Conditions on certificates of approval will include requirements to measure emissions. Among these will be requirements to have continuous monitors indicative of system performance for all LAER and BACT sources; confirmation of emissions through emission testing for such sources within six months of startup with annual retesting in the case of LAER sources; and retesting at the discretion of the Director responsible for approvals for BACT sources. For RACT sources, confirmation of emission rates will be required by an approved technique, undertaken and certified by a registered engineer. The Ministry may also require proponents to install and operate fixed ambient air

quality monitors or operate mobile ambient air quality monitors to confirm compliance with air quality standards. (See Appendix 10) of the draft regulation.

The Ministry will continue to require sources in designated areas to adhere to the requirements of the Ontario Air Pollution Index. The form of this index will remain unchanged from the existing Regulation 308.

The Ministry will enforce the regulation by virtue of the conditions on certificates of approval and through requirements at present contained in Section 6 of the O. Reg. 308 and Section 5 of the Environmental Protection Act.

3.2 Source Registration

The Ministry will require owners/operators of significant sources of emissions to the atmosphere to report their emissions of designated air contaminants according to provisions contained in Appendix 2 of the draft regulation. It is intended to phase in the requirement to register source emissions based on the Standard Industrial Code and the number of full-time employees. The Ministry is seeking advice from all affected parties on criteria to be used to trigger Source Registration requirements. It is the Ministry's intention to expand the scope of this Appendix on an annual basis to increase the number of sources required to register. The list of designated contaminants may also be changed from time to time as deemed necessary. Data collected under these provisions will provide the Ministry with the necessary information to track the success of control measures, indicate remaining, new or potential problem areas and identify major sources for the purposes of regional air quality modelling.

4. PHASED IMPLEMENTATION OF THE CLEAN AIR PROGRAM

New (and altered) and existing sources will be subject to the requirements of the Clean Air Program according to Appendix 3 of the Draft Regulation. This Appendix designates contaminants based on the availability of well documented rationales and the level of concern classification. Eight contaminants have been designated for the first phase of implementation (see Table I). Contaminants for the next phase of implementation will be selected from the group of Level 1 contaminants identified in Appendix 6-4. Subsequent phases will incorporate the remainder of Level 1 contaminants, Level 2 contaminants based on the availability of well documented rationales and concern level, and finally Level 3 contaminants. Completion of the phase-in process is scheduled to take a total of 10 years.

Table I Implementation by Chemical

PHASE	CHEMICALS REGULATED
Phase I	Acrylonitrile Benzene Carbon Tetrachloride Formaldehyde Vinyl Chloride Lead Manganese Dioxins and Furans

5. APPROVAL PROCESS

5.1 General

For the purposes of applying the principles of the Clean Air Program to the approvals process, sources of emission to the atmosphere will be categorized as follows:

- those to which the provisions outlined in 5.2 will apply;
- those complying with small source designation limits (SSDL's) to which 5.3 will apply;
- those eligible for evaluation under provisions for generic certificates of approval as contained in 5.4;
- those associated with experimental facilities to which the requirements in 5.5 will apply;
- sources eligible for treatment under codes of practice rather than under certificates of approval which will be required to follow procedures outlined in 5.6;
- sources of non-phased-in contaminants which will be required to follow the provisions of 5.7;
- sources covered under other regulations such as Reg. 311 - Motor Vehicles, Farm Practices Protection Act, Acid Rain regulations.

5.2 Sources of Emissions to the Atmosphere to which the Full Provisions of the Clean Air Program Will Apply

5.2.1 Determination of "Level of Concern"

All sources subject to the full provisions of the Clean Air Program will be required to obtain site-specific certificates of approval as outlined in Appendix 4 of the draft regulation, according to the phasing in mechanism identified in Appendix 3 of the draft regulation. For such facilities, applications for a site-specific certificate of approval will require a listing of all potential air contaminant emissions. This listing will include contaminants which have been phased in and those which have not. Proponents will be required to evaluate proposed emissions to identify those which will be in excess of the Small Source Designation Limits (SSDL's). It is proposed that emissions of contaminants above the SSDL will be subject to the proposed interim classification scheme outlined in Appendix 6-4 (List of Contaminants Classified on the basis of Level-of-Concern of the draft regulation and

accordingly rated as Level 1 (Lowest Achievable Emission Rate (LAER)); Level II (Best Available Control Technology (BACT)) or Level III (RACT). (Level I control corresponds to Level-of-Concern 1; Level II control corresponds to Level-of-Concern 2; and Level III control corresponds to Level-of-Concern 3). This will ensure the more hazardous the contaminant the more stringent the air pollution control.

The Ministry is seeking comment on the classification of contaminants, and the criteria for classification, as part of the public consultation process.

If a proponent identifies that proposed emissions fall below the SSDL, and the Ministry concurs with this finding, the contaminant will be eligible to be treated in the manner outlined in 5.4 and in Appendix 5 of the draft regulation.

The Ministry of the Environment will receive information from proponents and other interested parties for reclassification of contaminants using the process outlined in Appendix 6-5 of the draft regulation. The Ministry may also use the process outlined in Appendix 6-3 of the draft regulation to undertake reviews of the classifications in Appendix 6-4 of the draft regulation. Appendix 6-4 of the draft regulation will be changed from time to time to reflect any review resulting in new classifications.

5.2.2 Determination of Emission Limits and Procedures

Following determination of the appropriate control level, the proponent will be required to consult Appendix 7-1 of the draft regulation to see if there are appropriate emission limits and procedures for the process, set within the previous 12 months. At this point, the Ministry will supply confirmation of the status of the determination. In cases where no emission limit(s) has (have) been set, or the time since one was set is greater than 12 months, proponents must propose appropriate emission limits and procedures for their source(s). Following review, the Ministry may adopt the proposed limits and procedures or set an alternative level.

The primary reference for undertaking the appropriate control technology review will be *The List of Emission Limits and Approvals - Appendix 7* of the draft regulation. This list will be updated on a regular basis to reflect control technologies approved in the Province of Ontario and thus the base conditions for a Level 1 LAER review. The secondary reference will be *"Guideline for Determination of Emission Limits" - Appendix 7-2* of the draft regulation. Using these documents, proponents will be able to identify the appropriate emission limits for their particular operation. These proposed emission limits will be reviewed by the Ministry. Once the appropriate emission limits have been identified they will be referred to in the list of emission limits in units of kg/tonne of product, kg emitted/tonne of raw material, or kg/G joules emitted. For any particular source the emission limit

will be translated into a maximum emission rate in mass emitted/unit of time. This number will be appended to certificates of approval and used for enforcement purposes.

To help proponents undertake control technology reviews, the Ministry, besides producing guidelines for making determinations and maintaining an updated list of emission limits, will from time to time undertake world-wide emission limit reviews for specific industrial processes. These reviews will provide a base of information which proponents will be required to update to satisfy the requirements of the technology review.

Appeals of any Ministry decisions on emission limits will be directed to the Environmental Appeals Board under the process outlined in the Environmental Protection Act R.S.O., 1980 Chapter 141, Part XI.

When the facility for which emission limit-setting is undertaken is an existing facility, and a proponent is originally only seeking a certificate of approval to operate, if the review suggests that changes in air pollution control equipment or in the process are required, time limits for the completion of the changes will be established on a case-by-case basis and incorporated into program approvals or control orders.

As new Level 1 substances are designated, sources emitting contaminants for which a certificate of approval to operate has been granted under the Clean Air Program under normal circumstances would re-evaluate their controls at the expiry date of their certificate of approval to operate, or five years, whichever is less. However, under special circumstances identified by a Director, the Ministry will retain the right to override this provision.

5.2.3 *Evaluation of Emission Modelling*

In addition to determining the emission limit, proponents when they are required to follow the Clean Air Program regulation will have to demonstrate site-specific compliance, for their entire facility, with the *Interim Air Quality Standards* in Appendix 6-7 of the draft regulation using the mathematical or physical models specified in Appendix 8 of the draft regulation, or equivalent models, before the Ministry will issue a certificate of approval to construct and operate. The procedure for employing the models is provided in Appendix 8 of the draft regulation.

Where comparisons between modelling results and the standards show that emissions from a facility may cause or contribute to unsatisfactory air quality proponents will have alternative courses of action as follows:

- adopt control technology under the terms of a control order or program approval as specified in the Environmental Protection Act;

- make application to the Ministry that the area be designated as subject to a Non-Attainment Remedial Strategy (NARS) as discussed below and in Appendix 6-6 of the draft regulation;
- seek permission from the Ministry to use a Supplementary Control Program in accordance with Appendix 8-5 of the draft regulation.

5.2.4 *Non-Attainment Remedial Strategies (NARS)*

Where areas of the Province have existing ambient air quality levels of a particular contaminant or contaminants in excess of air quality standards, a (Regional) Director may designate such areas as non-conforming with respect to those contaminants. The process of establishing the NARS for a particular area will involve extensive public consultation with all affected stakeholders. The aim of the NARS will be establishment of a plan outlining what steps will be taken to achieve compliance with the air quality standards over time, including measures to be taken in addressing existing sources and dealing with proposals for new sources.

New and existing sources in these areas will be required to follow the measures outlined in the NARS when applying for new or renewed certificates of approval. Where air quality exceeds one or more standards, but the NARS has not yet been established, two situations may arise. For existing facilities or sources, proponents applying for approvals will have to demonstrate that all emission limits relevant for their activities under CAP will be met, **and** that there will be a net improvement in air quality due to the proposed modifications. For new facilities or sources entering such an area, a careful review of the proposal will be required. Before approval may be granted, the decision-making process will include a public consultation specific to the new source or facility, involving all interested stakeholders. Approvals granted under these conditions will last for the normal 10-year period, with any requirements arising out of the NARS taking effect upon renewal of the approval.

5.3 **Small Source Designation Limits (SSDL)**

Contaminants for which the predicted emission rate is below the Small Source Designation Level (SSDL) as defined in Appendix 5-1 of the draft regulation will not require the installation of emission control equipment or process changes, nor will they require site-specific certificates of approval. However, sources of such contaminants will still have to be registered according to the process outlined in Appendix 2 of the draft regulation. The Ministry may also require these sources to meet ambient air standards in areas where land use and/or concentration of similar sources is thought to be causing, or likely to cause, exceedances of air quality standards or to produce unacceptable risk levels. In such cases, the Ministry will require owners/operators to undertake modelling of their air emissions in accordance

with Appendix 8 of the draft regulation, and for comparisons to be made with the appropriate standards or risk levels listed in Appendix 6-7 of the draft regulation. A certificate of approval will be issued to sources in compliance. Any source not in compliance under these provisions will be required to enter into a Non-Attainment Remedial Strategy as outlined in 5.2.4. Unless they are deemed by the Director responsible for approvals to pose or to be contributing to an immediate threat to the environment, such sources will be allowed a specific period of time to install controls. The basis of the SSDL as discussed in Appendix 5-1 will be subject to further revision following the consultation period on the draft regulation.

5.4 Generic Certificates of Approval

Generic certificates of approval to construct and operate will be granted to groups of similar industries which have similar emissions. The general circumstances under which generic certificates will apply are identified in Appendix 4-2 of the draft regulation. Each class will be required to adhere to general requirements and to specific conditions developed for that class. An example of both the general and specific conditions is provided in Appendix 4-2 of the draft regulation. It is anticipated that generic certificates of approval will be developed by the Ministry in consultation with the public and the industries affected. Any proponent or proponents may apply at any time to have the Ministry consider developing a generic certificate of approval to construct and operate. The Ministry will be guided in its decision whether or not to develop a generic certificate by the number of generally similar sources or potential sources involved and by the ability of a generic environmental approval to deal adequately with the full range of applications which might be received for such sources. Certificates of approval to operate granted under this provision will require renewal in the same manner as site-specific approvals.

5.5 Experimental Facilities

All laboratory facilities with an additive exhaust flow rate of 5 cubic metres per second or greater, which emit LAER - Level 1 contaminants will be required to install control technology. Other experimental facilities such as pilot plants and prototype operations will also be required to install appropriate control technology and meet ambient air standards as specified in Appendix 7 of the draft regulation. Unless otherwise required by the Director, experimental facilities will not be required to undertake source or ambient monitoring. The Ministry from time to time will produce control technology guidelines for this class of facilities in consultation with interested groups.

5.6 Codes of Practice

Emissions to the atmosphere associated with such activities as fire training, controlled forest management burns and road construction will be dealt with under the proposed regulation through codes of practice. The Ministry will undertake to develop a basic

code of practice document which will serve as an outline for the development of more specific codes, as well as becoming the default code for activities subject to this approach where specific codes are not developed. The main responsibility for development of specific codes will be with those proponents who engage in these activities. However, the Ministry intends to assist and coordinate such efforts in a directed fashion.

The current regulation governs most of these sources in the same way as industrial stationary sources, except in the case of construction and certain similar activities specifically noted in Section 11 of Regulation 308. With the proposed set of codes, proponents engaging in these activities will not be required to apply for certificates of approval, apply controls to achieve emission limits, or model the impacts of their activities unless such requirements are specified in the code.

The Ministry proposes that any proponent or group of proponents may approach the Ministry at any time to sponsor the development of a specific code of practice for a particular unavoidable source of emissions to the atmosphere. The Ministry will be guided in whether or not to produce such a code by considering the current or potential number of sources involved and the nature of the activity.

A preliminary version of the basic code of practice is presented in Appendix 5-2 of the draft regulation.

5.7 Non-Phased-In Facilities

The Clean Air Program will be phased in according to the process identified in Section 4. During this phase-in period, new or modified sources emitting designated contaminants will be required to apply for certificates of approval to construct and operate under a modified version of the existing regulations. Under these provisions, sources will not be required to meet the emission rate limitations specified above. However, they will have to undertake modelling in accordance with the new modelling package and compare the results with the *Interim Air Quality Standards* listed in Appendix 6-7 of the draft regulation, according to the rules above for designated sources.

6. COMPLIANCE REQUIREMENTS

In order to confirm that sources of emission to the atmosphere are being operated in accordance with certificates of approval, and within the provisions of the Clean Air Program, the Regulation will contain a number of compliance requirements dealing with:

- source testing;
- continuous monitoring;
- ambient monitoring; and
- visible emission monitoring.

In addition, specific provisions intended to deal with compliance of construction and similar activities, and malfunctions, shutdowns and startups will be incorporated.

6.1 Source Testing

Source tests required under the CAP regulation will be undertaken in accordance with Appendix 9 of the draft regulation and will be included as a requirement on certificates of approval to operate. In the event that a proponent is not able to satisfy the Ministry through stack testing that the facility which has been constructed is capable of being operated within the terms of the certificate of approval (to operate), proponents will be required to submit proposals for modification of the source complex to a point which would bring them into compliance. A further series of stack tests, undertaken in accordance with Appendix 9 of the draft regulation, will be required to determine the effectiveness of the modified facilities. During any interim periods between approval and demonstration of compliance through stack tests, continued operation will be at the discretion of the Regional Director. In accordance with Appendix 9 the initial source testing shall be undertaken within six months of startup of the facility. The plan for the testing shall be provided to the Ministry within three months of startup.

6.2 Continuous Monitoring

Both LAER (Level I) and BACT (Level II) sources of emission to the atmosphere will require the installation of continuous monitors indicative of emissions or accepted surrogates for those contaminants contained in Appendix 9 of the draft regulation. Details of proposed monitoring methods will be stated on certificates of approval to operate. There will be an onus on owners/operators to maintain continuous monitoring equipment in accordance with acceptable specifications; to report any periods of down-time to Ministry officials; and to keep records for inspection by Provincial Officers designated under the Environmental Protection Act for a period of not less than three years. Where continuous monitors fail to show satisfactory compliance

with the terms of a certificate of approval, the Ministry will require changes in process controls through the issuance of a control order.

6.3 Ambient Air Monitoring

Ambient air monitoring may be required as a condition on a certificate of approval by the Regional Director. Such monitoring will be used to confirm stack test results on a continuous basis where no direct real-time monitoring of the principal atmospheric emissions is possible and to provide background data in the absence of existing data or modelled background data. Ambient monitoring programs, where required, will be operated in accordance with the specifications contained in Appendix 10 of the draft regulation. There will be an onus on operators to maintain the equipment to acceptable specifications; to report any periods of down-time to Ministry officials; and to keep records for inspection by Provincial Officers designated under the Environmental Protection Act for a period of not less than three years as outlined in Appendix 11. Where ambient monitors are required as a condition on a certificate of approval, if the owner/operator is not able to show satisfactory compliance, the Ministry will require changes in process controls or emission procedures through the issuance of a control order.

6.4 Proposed Interim Compliance Requirements For Visible Emissions

Specific measures will be included in the proposed regulation to control visible emissions by using trained observers and continuous monitoring equipment as outlined in Appendix 7.5 of the draft regulation. Where continuous monitoring equipment is specified by the Ministry as appropriate, it shall be operated according to the requirements for continuous monitoring outlined above and detailed in Appendix 11 of the draft regulation.

6.5 Compliance Provisions for Construction and Similar Activities

Under the provisions of the existing Regulation 308, s. 11, measures are included which enable Provincial Officers to control a number of identified and typically transient sources which have the potential to cause temporary nuisance air emission problems. These provisions will be retained in their existing form in the proposed Clean Air Program regulation. The Ministry will develop specific guidelines for implementing specific emission controls from such operations.

6.6 Compliance Provisions for Malfunctions, Shutdowns and Startups

The CAP regulation will include new special measures to regulate malfunctions, shutdowns and startups of equipment. These will replace measures at present specified in Regulation 308 s. 9 and will be subject to the conditions contained in Appendix 7-3 of the draft regulation. The intent of these conditions is to ensure that

all possible actions are taken to restrict emissions under such circumstances. In areas where Part IX, s. 79-112 of the Environmental Protection Act - "Spills" applies, any upset conditions covered under the proposed regulation will have to comply with the requirements of the Act and the Regulation.

